ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

August 22, 1997

Ms. Gail Nabasny, START Project Officer
United States Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604

RE: Allied Paper Site
Kalamazoo, Portage County, Michigan
TDD: S05-9705-001
PAN: 7Y0101SI

Dear Ms. Nabasny:

On May 2, 1997, the United States Environmental Protection Agency (U.S. EPA) tasked the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E), under Technical Direction Document (TDD) S05-9702-013 to perform sampling of polychlorinated biphenyls (PCBs) at the Allied Paper site in Kalamazoo, Portage County, Michigan.

According to a report issued by the Michigan Department of Environment (MDEQ), Allied Paper was involved in the deinking of carbonless copy paper, and between 1957 and 1971, was reprimanded by the Michigan Water Resources Commission for discharging raw paper wastes to Portage Creek and the Kalamazoo River. During this time, the PCB concentrations were never measured in the paper waste that bypassed clarifiers and was discharged; however, it is likely that this paper waste contained elevated PCB concentrations. Paper waste residuals that were deposited in landfills during this period contained highly elevated PCB concentrations. Thus, if the residuals from raw paper waste settling contained elevated PCB concentrations, the raw paper waste discharged to the rivers is also likely to have contained elevated PCB concentrations.

Although the actual PCB concentrations in the paper waste released to the rivers are unknown, Allied Paper claims to have released 156,000 pounds per day of the clay paper waste in 1961; 6,600 pounds per day in 1968; and 1,250 pounds per day in 1970. Thus, in 1961 alone, Allied released close to 57 million pounds of clay paper waste into Portage Creek and the Kalamazoo River.

On May 8, 1997, E & E START member Karen Kirchner arrived at the Lakeside Refining site at 0930 hours and was met by U.S. EPA On-Scene Coordinator (OSC) Walter Nied. START Kirchner and OSC Nied proceeded to the Allied Paper site located at 2030 Portage Road, Kalamazoo, Michigan, and were met by MDEQ representative Scott Cornelius, and potentially responsible party (PRP) contractor Rick Difiore with Blasland, Bouck and Leland (BBL). Once on site, Cornelius

discussed sample locations and the history of the site with START Kirchner and OSC Nied. Based on historical data, it was determined six samples would be collected from the area surrounding Portage Creek, specifically from Bryant Mill Dam to approximately 300 feet upstream. The samples would be collected in areas that exhibited elevated concentrations of PCBs in past sampling events. Cornelius assisted START Kirchner and OSC Nied with sample collection. All samples consisted of composite samples of a gray clay-like material. All sediment samples from Portage Creek were collected using plastic tubing, and all dried sediment from the banks of Portage Creek were collected using a stainless steel hand auger. Disposable plastic tubing and disposable stainless steel sample spoons were utilized in sample collection, with a new spoon or tube used for each sample location. START Kirchner transferred the collected samples from the tubing or auger into an aluminum pie pan, mixed the clay-like material, and then split the material between two sample jars. One 4-ounce glass jar was filled for BBL and one 8-ounce glass jar was filled for U.S. EPA analysis. The hand auger was decontaminated between sample locations.

A total of six samples were collected for PCB analysis. All sampling times were documented in Central Standard Time. Sample S1 was collected at 1110 hours in Portage Creek, near the west bank, approximately 100 feet south of the Bryant Mill Dam. Sample S2 was collected at 1145 hours, from 12 to 18 inches below grade in the vicinity of former sample location 12. Former location 12 contained a PCB concentration of 1,000 milligrams per kilogram (mg/kg) at a depth of 1 to 2 feet. Sample S3 was collected at 1215 hours, 12 to 18 inches below grade, from the east bank of Portage Creek, in the vicinity of former sample location 11. Former location 11 contained a PCB concentration of 110 mg/kg at a depth of 1 to 2 feet. Sample S4 was collected at 1230 hours, 12 to 18 inches below grade, from the west bank of Portage Creek, across the creek from sample location S3. Sample S5 was collected at 1235 hours in Portage Creek, approximately 5 feet northeast of sample location S4. Sample S5 had a detectable petroleum odor. An oil sheen was evident in Portage Creek in the area surrounding sample locations S4 and S5. Sample S6 was collected at 1250 hours, 12 to 18 inches below grade, in the vicinity of former sample location 2. Former location 2 contained a PCB concentration of 180 mg/kg at a depth of 1 to 2 feet.

The split samples were given to Difiore after decontamination of the outside of the 4-ounce sample jars. The 8-ounce sample jars were labeled, iced, and transported to the START warehouse, where they were picked up by courier on May 9, 1997. The samples were delivered to VOC Labs, Chicago Division, Naperville, Illinois, for PCB analysis under analytical TDD S05-9705-801. Seven-calendar day verbal and 14-calendar day hardcopy results, along with a quality assurance/quality control Level II data package, was requested of the subcontracted laboratory. Results were received from the BBL split samples and the results were compared. Due to a large discrepancy between the results of the split samples, the remaining sample material from VOC Labs was sent to a third laboratory, Gabriel Environmental Services (Gabriel), Chicago, Illinois, under analytical TDD S05-9706-811, for PCB
analysis. Results from the three laboratories, reported in mg/kg total PCBs, follow:

Sample Identification	VOC Labs	BBL	Gabriel
S1	5.5	110.0	4.9
S2	53.0	410.0	143.8
S3	9.4	31.0	<2.0
S4	0.35	9.2	<2.0
S5	<0.02	0.98	<2.0
S6	25.0	110.0	96.0

The U.S. EPA Toxic Substances Control Act (TSCA) action level for PCB cleanup in soil is 50 mg/kg. A total of 135 locations have been historically sampled at this site. The site historical analytical results for PCBs in the soil are as high as 1,000 mg/kg, with surficial soil samples exhibiting PCB concentrations as high as 700 mg/kg.

The Allied Paper site poses an imminent and substantial threat to human health and the environment based upon the following criteria listed in the National Contingency Plan (NCP) Section 300.415 (b)(2):

- **Actual or potential exposure to nearby human populations, animals, or food chain from hazardous substances or pollutants or contaminants.** PCBs are listed as hazardous substances under 311(b)(2) of the Clean Water Act, as set forth in 40 CFR Section 116.4 Table A. The Portage Creek sediments sampled under the supervision of U.S. EPA contained up to 143.8 mg/kg PCBs in subsurface sediments. In addition, historical data indicates PCB levels were as high as 1,000 mg/kg in subsurface sediments. The Allied Paper sediments are, therefore, considered hazardous substances. Under TSCA, 40 CFR 761.20 states that "exposure of human beings or the environment to PCBs...may be significant, depending upon the quantity of PCBs, ...the likelihood of exposure to humans and the environment...". The TSCA action level for PCBs in soil is 50 mg/kg.

  The Allied Paper site is located in a mixed industrial and residential area. The Bryant Mill Pond area is utilized illegally as a recreational area as there was evidence of abandoned deer blinds and signs of trespassing on site. In addition, the waters of Portage Creek and its sediments flow over the Bryant Mill Dam. Portage Creek feeds into the Kalamazoo River, which feeds into Lake Michigan. Currently, the Michigan Department of Natural Resources has a fish advisory/ban for fish in the Kalamazoo River due to the elevated levels of PCBs in the fish. The high probability of continued releases of PCBs creates a direct threat to human health and the environment. The continued release of PCBs into the creek could result in exposure of freshwater organisms and humans to PCBs through the process of bioaccumulation, wherein PCBs are increasingly concentrated in organisms within the food chain until species higher on the food chain contain levels of PCBs which become toxic to the

organism or their predators.

- **Actual or potential contamination of drinking water supplies or sensitive ecosystems.** Portage Creek, a tributary to the Kalamazoo River, flows through the Allied Paper site. The Kalamazoo River flows to Lake Michigan, a Great Lake and sensitive ecosystem. Releases to Lake Michigan pose a threat to human health and the environment through bioaccumulation of PCBs in the food chain.

- **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.** Portage Creek would likely be subjected to extreme weather conditions in the winter and spring, which would enhance the threat of a potential release. The breakup of ice in late winter and the movement of ice floes downstream will increase scouring of the banks. Heavy spring rains will increase the water velocity and the volume of discharge in the river, thereby increasing the potential for scouring. This increase in scouring, creek volume, and velocity and load could cause an increase in the downstream transportation of contaminated sediments, especially in Portage Creek and the Kalamazoo River, and possibly result in a release to Lake Michigan.

Based upon the historical data of the site, the 143.8 mg/kg PCB concentration in sample S2, and the potential threats that the site poses, action by the PRPs is necessary to mitigate the continuing release of PCB contamination to the sediments further downstream to the Kalamazoo River.

This letter report completes the requirements for TDD S05-9705-001.

Sincerely,

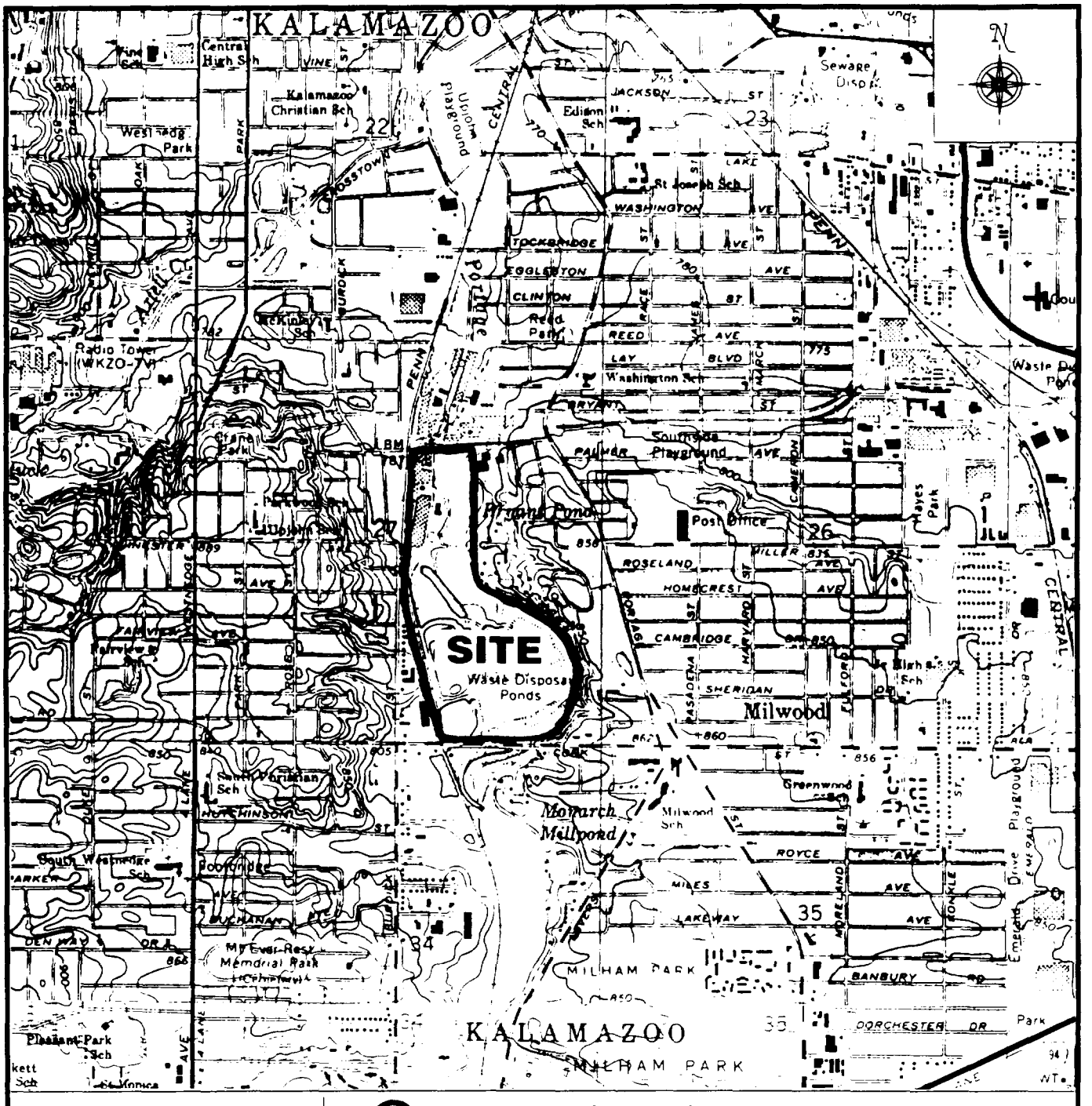
Karen Kirchner
START Project Manager

Thomas Kouris
START Program Manager

Attachments: 1 Site Maps
2 Analytical Results
3 Photodocumentation

Attachment 1

Site Maps



Quadrangle Location

Michigan

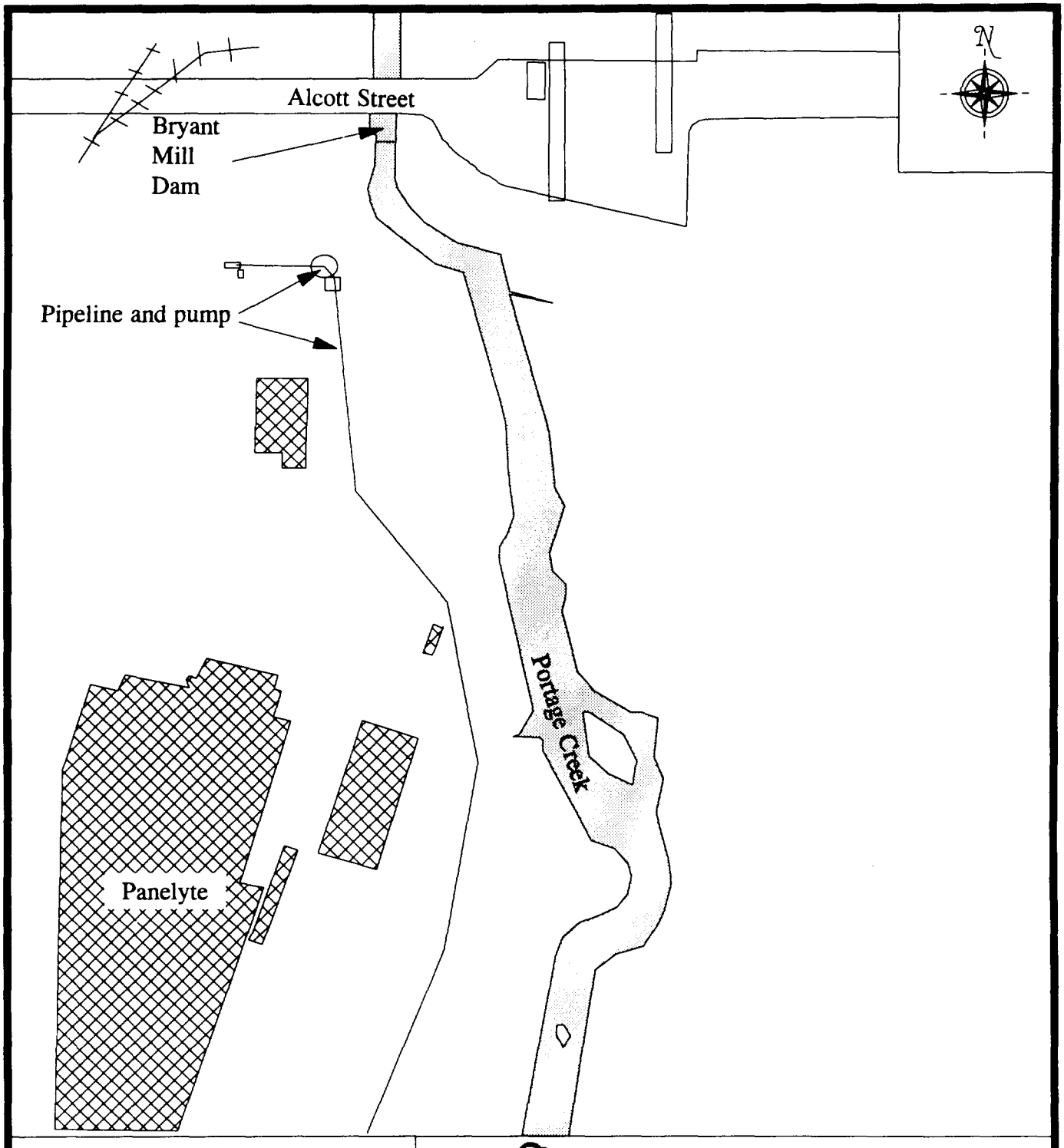
ecology and environment, inc.

Superfund Technical Assessment And Response Team

Region 5

33 North Dearborn Street, Chicago, Illinois 60602

TITLE	Site Location Map	FIGURE #	1
SITE	Allied Paper	SCALE	1:24,000
CITY	Kalamazoo STATE Michigan	TDD #	S05-9705-001
SOURCE	USGS 7.5 minute series, Kalamazoo and Portage Quadrangles	DATE	1997
		REVISED	1973



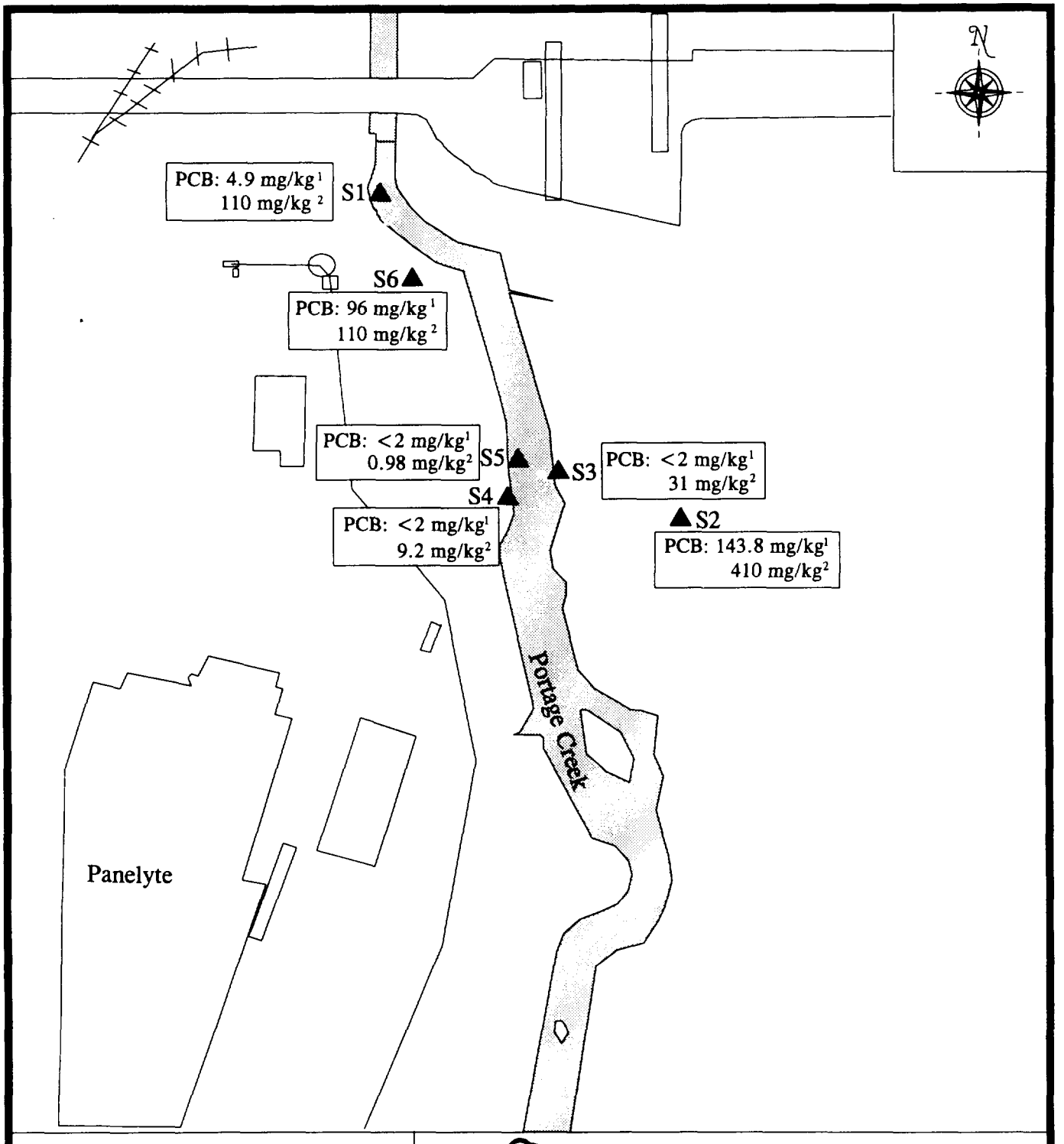
Legend

Railroad tracks

Building/structure

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region 5
33 North Dearborn Street, Chicago, Illinois 60602

TITLE: Site Features Map	FIGURE #: 2
SITE: Allied Paper	SCALE: Not to Scale
CITY: Kalamazoo STATE: Michigan	PAN: S05-9705-001
SOURCE: Ecology & Environment, Inc.	DATE: 1997
	REVISED:



Legend

1 USEPA result (Gabriel)

2 BBL result

▲ Sample location

ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region 5
33 North Dearborn Street, Chicago, Illinois 60602

TITLE: Sample Location Map	FIGURE #: 3
SITE: Allied Paper	SCALE: Not to Scale
CITY: Kalamazoo STATE: Michigan	PAN: S05-9705-001
SOURCE: Ecology & Environment, Inc.	DATE: 1997
	REVISED:

Attachment 2

Analytical Results

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

M E M O R A N D U M

DATE: June 11, 1997

TO: Karen Kirchner, START Project Manager, E & E, Chicago, Illinois

FROM: David Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

THROUGH: Mary Jane Ripp, START Assistant Program Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for Polychlorinated Biphenyls (PCBs), Allied Paper, Kalamazoo, Kalamazoo County, Michigan

REFERENCE: Project TDD S05-9705-001 Analytical TDD S05-9705-801
Project PAN 7Y0101SIXX Analytical PAN 7YAA01TAXX

The data quality assurance (QA) review of six solid samples collected from the Allied Paper site is complete. The samples were collected on May 8, 1997, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to V.O.C. Analytical Laboratories, Naperville, Illinois, for analyses. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8081.

Sample Identification

START Identification No.	Laboratory Identification No.
S-1	L19031-01
S-2	L19031-02
S-3	L19031-03
S-4	L19031-04
S-5	L19031-05
S-6	L19031-06

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on May 8, 1997. The samples were extracted on May 14, 1997 and analyzed on May 17, 1997. This is within the 14-day holding time limit, from collection to extraction, and 40-day limit from extraction to analysis.

II. Instrument Performance: Acceptable

The chromatographic resolution was adequate in the standard and sample chromatograms. Surrogate retention times were consistent in the samples and standards.

III. Calibrations:

• Initial Calibration: Acceptable

A six-point initial calibration for PCBs was performed prior to analysis. The percent relative standard deviations (%RSDs) between response factors were less than 10%.

• Continuing Calibration: Acceptable

The percent differences between the calibration standard response factors were less than 15%.

IV. Blank: Acceptable

A method blank was analyzed with the sample. No target compounds were detected in the blank.

V. Compound Identification: Acceptable

The chromatograms and retention times of the detected PCBs in the samples matched those of the standards.

VI. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 7.0, PCBs. Based upon the information provided, the data are acceptable for use.

Our Quality Control Is Your Quality Assurance

Client #: CHI-96-031104
Address: Ecology and Environment

33 N. Dearborn St., Suite 900
Chicago, IL 60602
Attn: Dave Hendren

Page: Page 1 of 1
Date: 05/20/97
Log #: L19031-1

Sample Description:

Project #KJ5102
SO5-9705-801

Label: S1
Date Sampled: 05/08/97
Time Sampled: 11:10
Date Received: 05/13/97
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analyst
Polychlorinated Biphenyls							
PCB 1016	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1221	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1232	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1242	5500	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1248	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1254	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1260	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
Total PCB's	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
Dilution Factor	10		3550/8080		05/14	05/16	DM
Percent Solids							
Percent Solid	40	%	SM2540B	0.10	05/13	05/13	SMP

BDL = Below Detection Limits
* Compounds are Screened Only, with an estimated detection limit.
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.
All analyses were performed within EPA holding times unless otherwise noted.
Analyses are reported in dry weight unless otherwise indicated by units.

QAP# 900376G
SUB HRS# 86122,86109,E86048
SC CERT# 96031
ELPAT# 13801
VA CERT# 00395
HRS# E86240,86356
ADEM ID# 40850
TN CERT# 02985
CA CERT# I-1068
AZ CERT# AZ0529
NC CERT# 444
ND CERT# R-148
CT CERT# PH-0122
USACE CERT
MA CERT# M-FL449

Respectfully submitted,

Project Manager

L19031-1

Client #: CHI-96-031103
Address: Ecology and Environment

33 N. Dearborn St., Suite 900
Chicago, IL 60602
Attn: Dave Hendren

Page: Page 1 of 1
Date: 05/20/97
Log #: L19031-2

Sample Description:

Project #KJ5102
SO5-9705-801

Label: S2
Date Sampled: 05/08/97
Time Sampled: 11:45
Date Received: 05/13/97
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analyst
Polychlorinated Biphenyls							
PCB 1016	BDL	ug/kg	3550/8080	2000	05/14	05/16	DM
PCB 1221	BDL	ug/kg	3550/8080	2000	05/14	05/16	DM
PCB 1232	BDL	ug/kg	3550/8080	2000	05/14	05/16	DM
PCB 1242	53000	ug/kg	3550/8080	2000	05/14	05/16	DM
PCB 1248	BDL	ug/kg	3550/8080	2000	05/14	05/16	DM
PCB 1254	BDL	ug/kg	3550/8080	2000	05/14	05/16	DM
PCB 1260	BDL	ug/kg	3550/8080	2000	05/14	05/16	DM
Total PCB's	BDL	ug/kg	3550/8080	2000	05/14	05/16	DM
Dilution Factor	100		3550/8080		05/14	05/16	DM
Percent Solids							
Percent Solid	50	%	SM2540B	0.10	05/13	05/13	SMP

BDL = Below Detection Limits
* Compounds are Screened Only, with an estimated detection limit.
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.
All analyses were performed within EPA holding times unless otherwise noted.
Analyses are reported in dry weight unless otherwise indicated by units.

QAP# 900376G
SUB HRS# 86122,86109,E86048
SC CERT# 96031
ELPAT# 13801
VA CERT# 00395
HRS# E86240,86356
ADEM ID# 40850
TN CERT# 02985
CA CERT# I-1068
AZ CERT# AZ0529
NC CERT# 444
ND CERT# R-148
CT CERT# PH-0122
USACE CERT
MA CERT# M-FL449

Respectfully submitted,

Project Manager

L19031-2

Client #: CHI-96-031103
Address: Ecology and Environment

33 N. Dearborn St., Suite 900
Chicago, IL 60602
Attn: Dave Hendren

Page: Page 1 of 1
Date: 05/20/97
Log #: L19031-3

Sample Description:

Project #KJ5102
SO5-9705-801

Label: S3
Date Sampled: 05/08/97
Time Sampled: 12:15
Date Received: 05/13/97
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analyst
Polychlorinated Biphenyls							
PCB 1016	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1221	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1232	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1242	9400	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1248	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1254	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
PCB 1260	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
Total PCB's	BDL	ug/kg	3550/8080	200	05/14	05/16	DM
Dilution Factor	10		3550/8080		05/14	05/16	DM
Percent Solids							
Percent Solid	47	%	SM2540B	0.10	05/13	05/13	SMP

BDL = Below Detection Limits
* Compounds are Screened Only, with an estimated detection limit.
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.
All analyses were performed within EPA holding times unless otherwise noted.
Analyses are reported in dry weight unless otherwise indicated by units.

QAP# 900376G
SUB HRS# 86122,86109,E86048
SC CERT# 96031
ELPAT# 13801
VA CERT# 00395
HRS# E86240,86356
ADEM ID# 40850
TN CERT# 02985
CA CERT# I-1068
AZ CERT# AZ0529
NC CERT# 444
ND CERT# R-148
CT CERT# PH-0122
USACE CERT
MA CERT# M-FL449

Respectfully submitted,

Project Manager

L19031-3

Client #: CHI-96-031103
Address: Ecology and Environment

33 N. Dearborn St., Suite 900
Chicago, IL 60602
Attn: Dave Hendren

Page: Page 1 of 1
Date: 05/20/97
Log #: L19031-4

Sample Description:

Project #KJ5102
SO5-9705-801

Label: S4
Date Sampled: 05/08/97
Time Sampled: 12:30
Date Received: 05/13/97
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analyst
Polychlorinated Biphenyls							
PCB 1016	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1221	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1232	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1242	350	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1248	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1254	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1260	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
Total PCB's	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
Dilution Factor	1.0		3550/8080		05/14	05/16	DM
Percent Solids							
Percent Solid	48	%	SM2540B	0.10	05/13	05/13	SMP

BDL = Below Detection Limits
* Compounds are Screened Only, with an estimated detection limit.
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.
All analyses were performed within EPA holding times unless otherwise noted.
Analyses are reported in dry weight unless otherwise indicated by units.

QAP# 900376G
SUB HRS# 86122,86109,E86048
SC CERT# 96031
ELPAT# 13801
VA CERT# 00395
HRS# E86240,86356
ADEM ID# 40850
TN CERT# 02985
CA CERT# I-1068
AZ CERT# AZ0529
NC CERT# 444
ND CERT# R-148
CT CERT# PH-0122
USACE CERT
MA CERT# M-FL449

Respectfully submitted,

Project Manager

L19031-4

Client #: CHI-96-031103
Address: Ecology and Environment

33 N. Dearborn St., Suite 900
Chicago, IL 60602
Attn: Dave Hendren

Page: Page 1 of 1
Date: 05/20/97
Log #: L19031-5

Sample Description:

Project #KJ5102
SO5-9705-801

Label: S5
Date Sampled: 05/08/97
Time Sampled: 12:35
Date Received: 05/13/97
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analys
Polychlorinated Biphenyls							
PCB 1016	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1221	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1232	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1242	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1248	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1254	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
PCB 1260	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
Total PCB's	BDL	ug/kg	3550/8080	20	05/14	05/16	DM
Dilution Factor	1.0		3550/8080		05/14	05/16	DM
Percent Solids							
Percent Solid	47	%	SM2540B	0.10	05/13	05/13	SMP

BDL = Below Detection Limits
* Compounds are Screened Only, with an estimated detection limit.
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.
All analyses were performed within EPA holding times unless otherwise noted.
Analyses are reported in dry weight unless otherwise indicated by units.

QAP# 900376G
SUB HRS# 86122,86109,E86048
SC CERT# 96031
ELPAT# 13801
VA CERT# 00395
HRS# E86240,86356
ADEM ID# 40850
TN CERT# 02985
CA CERT# I-1068
AZ CERT# AZ0529
NC CERT# 444
ND CERT# R-148
CT CERT# PH-0122
USACE CERT
MA CERT# M-FL449

Respectfully submitted,
Project Manager

L19031-5

Client #: CHI-96-031104
Address: Ecology and Environment

33 N. Dearborn St., Suite 900
Chicago, IL 60602
Attn: Dave Hendren

Page: Page 1 of 1
Date: 05/20/97
Log #: L19031-6

Sample Description:

Project #KJ5102
SO5-9705-801

Label: S6
Date Sampled: 05/08/97
Time Sampled: 00:00
Date Received: 05/13/97
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analyst
Polychlorinated Biphenyls							
PCB 1016	BDL	ug/kg	3550/8080	1000	05/14	05/16	DM
PCB 1221	BDL	ug/kg	3550/8080	1000	05/14	05/16	DM
PCB 1232	BDL	ug/kg	3550/8080	1000	05/14	05/16	DM
PCB 1242	25000	ug/kg	3550/8080	1000	05/14	05/16	DM
PCB 1248	BDL	ug/kg	3550/8080	1000	05/14	05/16	DM
PCB 1254	BDL	ug/kg	3550/8080	1000	05/14	05/16	DM
PCB 1260	BDL	ug/kg	3550/8080	1000	05/14	05/16	DM
Total PCB's	BDL	ug/kg	3550/8080	1000	05/14	05/16	DM
Dilution Factor	50		3550/8080		05/14	05/16	DM
Percent Solids							
Percent Solid	42	%	SM2540B	0.10	05/13	05/13	SMP

BDL = Below Detection Limits
* Compounds are Screened Only, with an estimated detection limit.
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.
All analyses were performed within EPA holding times unless otherwise noted.
Analyses are reported in dry weight unless otherwise indicated by units.

QAP# 900376G
SUB HRS# 86122,86109,E86048
SC CERT# 96031
ELPAT# 13801
VA CERT# 00395
HRS# E86240,86356
ADEM ID# 40850
TN CERT# 02985
CA CERT# I-1068
AZ CERT# AZ0529
NC CERT# 444
ND CERT# R-148
CT CERT# PH-0122
USACE CERT
MA CERT# M-FL449

Respectfully submitted,

Project Manager

L19031-6

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

M E M O R A N D U M

DATE: July 13, 1997

TO: Karen Kirchner, START Project Manager, E & E, Chicago, Illinois

FROM: David Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

THROUGH: Mary Jane Ripp, START Assistant Program Manager, E & E, Chicago, Illinois

SUBJECT: Data Quality Review for Polychlorinated Biphenyls (PCBs), Allied Paper, Kalamazoo, Kalamazoo County, Michigan

REFERENCE: Project TDD S05-9705-001 Analytical TDD S05-9706-811
Project PAN 7Y0101SIXX Analytical PAN 7YAC01TAXX

The data quality assurance (QA) review of six solid samples collected from the Allied Paper site is complete. The samples were collected on May 8, 1997, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were first analyzed by V.O.C. Analytical. After completion of the initial analyses, the samples were sent to Gabriel Laboratories, Inc., Chicago, Illinois, for independent evaluation. This memorandum reviews the analyses performed by Gabriel Laboratories. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 8081.

Sample Identification

START Identification No.	Laboratory Identification No.
S-1	C706222-01A
S-2	C706222-02A
S-3	C706222-03A
S-4	C706222-04A
S-5	C706222-05A
S-6	C706222-06A

Data Qualifications:

I. Sample Holding Time: Qualified

The samples were collected on May 8, 1997, extracted on June 19, 1997, and analyzed on June 23, 1997. This exceeds the 14-day holding time limit, from collection to extraction, and all results have been qualified as estimated by the laboratory.

II. Instrument Performance: Acceptable

The chromatographic resolution was adequate in the standard and sample chromatograms. Surrogate retention times were consistent in the samples and standards.

III. Calibrations:

• Initial Calibration: Acceptable

A five-point initial calibration was performed prior to analysis. The percent relative standard deviations (%RSDs) between response factors were less than 20% for all detected PCBs.

• Continuing Calibration: Not Applicable

The initial calibrations for detected PCBs were performed at the time of sample analyses.

IV. Blank: Acceptable

A method blank was analyzed with the sample. No target compounds or contaminants were detected in the blank.

V. Compound Identification: Acceptable

The chromatographic patterns of the reported PCBs matched those of the standards.

VI. Additional QC Checks: Acceptable

The recoveries of the surrogates used in the samples were within acceptable laboratory limits.

VII. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 6.0, Pesticides/PCBs. Based upon the information provided, the data are acceptable for use, with the above-stated qualifications.

Data Qualifiers and Definitions:

J - The associated numerical value is an estimated quantity because the reported concentrations were less than required detection limits or quality control criteria were not met.

gabriel
environmental services

Client: Ecology & Environment Inc. Page 1

Sample Description:	**S-1 PORTAGE CREEK**	Sample No.:	**C706222-01**
Sample Date:	**05/08/97**	Date Received:	**06/18/97**
Collected By:	**CLIENT PERSONNEL**	Matrix:	**SOIL**
Test Description:	**PCB's**	Method:	**SW 846 808**

PARAMETER	RESULT	PQL
Arochlor-1016	< DL	0.50
Arochlor-1221	< DL	0.50
Arochlor-1232	< DL	0.50
Arochlor-1242	4.90 J	0.50
Arochlor-1248	< DL	0.50
Arochlor-1254	< DL	0.50
Arochlor-1260	< DL	0.50

COMMENTS: Observed peaks within 1248 elution range.
Result is reported per dry-weight.

EXTRACTED	06/19/97	UNITS	mg/kg
DATE RUN	06/23/97	ANALYST	SS

DATA RELEASE
AUTHORIZED BY: _____ DATE: 6-25-97
Lazaro Lopez, Organics Group Manager

gabriel
environmental services

Client: Ecology & Environment Inc. Page 1

Sample Description:	**S-2 FORMERLY 12**	Sample No.:	**C706222-02**
Sample Date:	**05/08/97**	Date Received:	**06/18/97**
Collected By:	**CLIENT PERSONNEL**	Matrix:	**SOIL**
Test Description:	**PCB's**	Method:	**SW 846 808**

PARAMETER	RESULT	PQL
Arochlor-1016	< DL	10
Arochlor-1221	< DL	10
Arochlor-1232	< DL	10
Arochlor-1242	< DL	10
Arochlor-1248	143.8 J	10
Arochlor-1254	< DL	10
Arochlor-1260	< DL	10

COMMENTS: Observed other peaks within elution range.
Result is reported per dry-weight.

EXTRACTED	06/19/97	UNITS	mg/kg
DATE RUN	06/23/97	ANALYST	SS

DATA RELEASE
AUTHORIZED BY: _____ DATE: 6-25-97
Lazaro Lopez, Organics Group Manager

gabriel
environmental services

Client: Ecology & Environment Inc. Page 1

Sample Description:	**S-3 FORMERLY 11**	Sample No.:	**C706222-03**
Sample Date:	**05/08/97**	Date Received:	**06/18/97**
Collected By:	**CLIENT PERSONNEL**	Matrix:	**SOIL**
Test Description:	**PCB's**	Method:	**SW 846 808**

PARAMETER	RESULT	PQL
Arochlor-1016	< DL	2.0
Arochlor-1221	< DL	2.0
Arochlor-1232	< DL	2.0
Arochlor-1242	< DL	2.0
Arochlor-1248	< DL	2.0
Arochlor-1254	< DL	2.0
Arochlor-1260	< DL	2.0

COMMENTS:

EXTRACTED	06/19/97	UNITS	mg/kg
DATE RUN	06/20/97	ANALYST	SS

DATA RELEASE
AUTHORIZED BY: _____ DATE: 6-25-97
Lazaro Lopez, Organics Group Manager

printed on recycled paper

gabriel
environmental services

Client: Ecology & Environment Inc. Page 1

Sample Description:	**S-4 BANK ACRISS W.FROM S3**	Sample No.:	**C706222-04**
Sample Date:	**05/08/97**	Date Received:	**06/18/97**
Collected By:	**CLIENT PERSONNEL**	Matrix:	**SOIL**
Test Description:	**PCB's**	Method:	**SW 846 808**

PARAMETER	RESULT	PQL
Arochlor-1016	< DL	2.0
Arochlor-1221	< DL	2.0
Arochlor-1232	< DL	2.0
Arochlor-1242	< DL	2.0
Arochlor-1248	< DL	2.0
Arochlor-1254	< DL	2.0
Arochlor-1260	< DL	2.0

COMMENTS:

EXTRACTED	06/19/97	UNITS	mg/kg
DATE RUN	06/20/97	ANALYST	SS

DATA RELEASE
AUTHORIZED BY: _____ DATE: 6-25-97
Lazaro Lopez, Organics Group Manager

gabriel
environmental services

Client: Ecology & Environment Inc. Page 1

Sample Description:	**S-5 SED 8' NE OF S4**	Sample No.:	**C706222-05**
Sample Date:	**05/08/97**	Date Received:	**06/18/97**
Collected By:	**CLIENT PERSONNEL**	Matrix:	**SOIL**
Test Description:	**PCB's**	Method:	**SW 846 808**

PARAMETER	RESULT	PQL
Arochlor-1016	< DL	0.50
Arochlor-1221	< DL	0.50
Arochlor-1232	< DL	0.50
Arochlor-1242	< DL	0.50
Arochlor-1248	< DL	0.50
Arochlor-1254	< DL	0.50
Arochlor-1260	< DL	0.50

COMMENTS:

EXTRACTED	06/19/97	UNITS	mg/kg
DATE RUN	06/20/97	ANALYST	SS

DATA RELEASE
AUTHORIZED BY: _____ DATE: 6-25-97
Lazaro Lopez, Organics Group Manager

gabriel
environmental services

Client: Ecology & Environment Inc. Page 1

Sample Description:	**S-6 FORMERLY 2**	Sample No.:	**C706222-06**
Sample Date:	**05/08/97**	Date Received:	**06/18/97**
Collected By:	**CLIENT PERSONNEL**	Matrix:	**SOIL**
Test Description:	**PCB's**	Method:	**SW 846 808**

PARAMETER	RESULT	PQL
Arochlor-1016	< DL	4.0
Arochlor-1221	< DL	4.0
Arochlor-1232	< DL	4.0
Arochlor-1242	< DL	4.0
Arochlor-1248	96.0 J	4.0
Arochlor-1254	< DL	4.0
Arochlor-1260	< DL	4.0

COMMENTS: Observed other peaks within elution range.
Result is reported per dry-weight.

EXTRACTED	06/19/97	UNITS	mg/kg
DATE RUN	06/23/97	ANALYST	SS

DATA RELEASE
AUTHORIZED BY: _____ DATE: 6-25-97
Lazaro Lopez, Organics Group Manager

printed on recycled paper

Attachment 3

Photodocumentation